Health Care Financing Program Statistics

Medicare: Use of Hospital Outpatient Services by the Aged, 1975

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Health Care Financing Program Statistics

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The mission of the Health Care Financing Administration is to promote the timely delivery of appropriate, quality health care to its beneficiaries—approximately 47 million of the nation's aged, disabled, and poor. The Agency must also ensure that program beneficiaries are aware of the services for which they are eligible, that those services are accessible and of high quality, and that Agency policies and actions promote efficiency and quality within the total health care delivery system.

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Medicare: Use of Hospital Outpatient Services by the Aged, 1975

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Medicare: Use of Hospital Outpatient Services by the Aged, 1975

INTRODUCTION

OVERVIEW

This is the first report published by the Health Care Financing Administration which describes the use of hospital outpatient services by aged Medicare beneficiaries. It presents statistical data on the use of hospital outpatient services by aged Medicare beneficiaries in 1975. The study is presented against the background of the rapid growth between 1967 and 1975 in the use of outpatient benefits by aged Medicare beneficiaries.

Among the services covered by Medicare, reimbursements for outpatient benefits had the largest rate of increase during this period. Between 1967 and 1975, Medicare reimbursements for outpatient benefits increased from $38 million to $374 million, an average annual increase of about 33 percent. Hospital outpatient services are the largest component of the outpatient benefit, representing about 86 percent of all outpatient reimbursements in 1975.

The patterns of use and charges for hospital outpatient services in 1975 are examined by the demographic characteristics of beneficiaries, place of residence, and types of services. Particular emphasis is placed on analyzing the use by race, of hospital outpatient clinic and emergency room services in metropolitan and nonmetropolitan areas. The data are analyzed to ascertain whether the inaccessibility of private

physicians in metropolitan areas to blacks has resulted in their greater use of hospital outpatient facilities relative to whites. Data from the Current Medicare Survey of 1975 are used to contrast whites' and blacks' receipt of physician services by place of service.

RELATIONSHIP OF HOSPITAL OUTPATIENT BENEFITS TO OTHER MEDICARE BENEFITS

The Medicare program consists of two parts -- hospital insurance (HI) also known as Part A, and supplementary medical insurance (SMI), also referred to as Part B.[1] The HI program pays for inpatient care provided by hospitals and skilled nursing facilities, and for services provided by home health agencies for the posthospital treatment of the condition that required hospitalization.

The SMI program covers physicians' services; outpatient services rendered in hospitals, rural health clinics, and physician directed community health centers; and home health agency services. Hospital outpatient departments provide diagnostic and therapeutic services. Diagnostic services consist of medically necessary examinations and tests that aid in assessing medical conditions or identifying diseases. Therapeutic services are those that aid a physician in treating patients and must be incidental to a physician's services. Services covered in hospital outpatient departments include:

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[1] For a more detailed summary of the Medicare program covering such topics as eligibility, the method of determining premiums, and reasonable charges, see Health Care Financing Administration, Office of Policy, Planning and Research, Medicare: Section 1.1, Reimbursement by State and County, Washington, D.C., 1978.

- services of nurses, psychologists, technicians, and other hospital personnel;
- laboratory and radiological services;
- clinic and emergency room faclities;
- the use of supplies and equipment;
- outpatient physical therapy;
- speech pathology; and
- drugs.

For billing purposes, physicians' services to patients in the hospital outpatient departments consist of two components: the "hospital component" and the "professional component," the latter generally being the services of the physician. The hospital outpatient bill generally requests payment for only the hospital component and the outpatient services as noted above. The hospital outpatient bill does not usually include the physician's services except where the service is rendered by an intern or resident or the service is rendered by a physician who has agreed to have the hospital bill for his services. Radiologists and pathologists often have these agreements with the hospital. For the most part, physicians bill for their services separately. The specific arrangement between each physician and hospital cannot be generalized across the program. This report does not contain physician services bill information because such information is not currently linked to outpatient data on a unit record basis.

Generally, the SMI program pays for 80 percent of reasonable charges for covered physician services and most other medical services after the beneficiary has paid the applicable deductible. Since 1973, the annual SMI deductible has been the first $60 of reasonable charges. The hospital outpatient department is a cost center on cost reports

submitted by hospitals at the end of each fiscal year. As for other cost centers, Medicare reimbursement is based on the reasonable cost of covered services furnished to Medicare beneficiaries. The hospital charges the patient for services received. The patient is liable for any unmet part of the deductible and for 20 percent of any charges thereafter. The revenues collected by the hospital from Medicare beneficiaries for covered outpatient services are used to defray the costs of outpatient services reimburseable by the program.

The hospital submits a bill to the Medicare program for all patients who use hospital outpatient services. Therefore, the Medicare files contain a record of all beneficiaries who used covered outpatient services and the amount of charges incurred, whether the patient paid all, part, or none of the bill or whether any reimbursements are payable by the program. The utility of this for analytic purposes will be discussed further in the analysis section.

MEASURES AND METHODS OF COMPARISON

Three principal measures of service use are employed in this study:

1) the proportion of beneficiaries who used covered hospital outpatient services during the year, not necessarily receiving reimbursement;
2) the charges incurred by the users of covered hospital outpatient services; and
3) the average charges incurred per beneficiary for hospital outpatient services (the product of the first two measures). The latter measure

is a summary measure of the degree to which a population of aged Medicare beneficiaries with specified characteristics differ in the use of hospital outpatient services.

A fourth measure, reimbursement per beneficiary, is also presented to show the relative distribution of Medicare hospital outpatient benefits to groups with specified characteristics. In this report this measure is given secondary emphasis because Medicare payment of hospital outpatient benefits is dependent upon the beneficiary exceeding the SMI deductible. The beneficiary's deductible status is more likely to depend on the use of other SMI-covered services, particularly physician services. Thus, the distinction is made between the use of and charges incurred for hospital outpatient services and reimbursement for those services.

The hospital submits a bill for each outpatient contact. The completeness of the record of use of hospital outpatient services and the charges incurred permits computation of charges per beneficiary which relates more directly to the total use of services by a beneficiary group than does reimbursement per beneficiary which only relates to use of reimbursed services.

MAJOR FINDINGS

GROWTH OF OUTPATIENT SERVICES UNDER MEDICARE, 1967-1975

Reimbursements

- Medicare reimbursements for outpatient services to the aged have increased more rapidly than any other covered service; reimbursements

for outpatient services increased from $38 million in 1967 to $374 million in 1975, a nearly tenfold rise.

- Reimbursement for physicians' services rose 2.5 times in the same period, from $1,224 million to $3,050 million.
- Outpatient reimbursements as a percent of all Medicare reimbursements increased from 0.9 percent in 1967 to 2.9 percent in 1975; during the same period, physicians' services as a percent of all Medicare reimbursements decreased from 28.9 to 24.0 percent.
- It has been estimated by Medicare actuaries that, by fiscal year 1984, reimbursements for physicians' services will have decreased to 4.4 times that of outpatient reimbursements, as compared to 32.0 times in 1967 and 8.1 times in 1975.

Reimbursed Users per 1,000 Enrolled

- The proportion of aged beneficiaries using reimbursed outpatient services increased 105 percent, from 84 per 1,000 enrolled in 1967 to 172 per 1,000 enrolled in 1975; the corresponding increase for physicians' services was 45 percent, from 359 to 519 per 1,000 enrolled.
- Between 1967 and 1975, the average annual rate of growth of reimbursed outpatient users per 1,000 enrolled, 9.4 percent, far exceeded the 4.7 percent growth rate of physicians' services.

HOSPITAL OUTPATIENT SERVICES, 1975

Users, Charges, and Reimbursements

- Nearly 5.5 million aged persons, 248 per 1,000 enrolled, used covered hospital outpatient services, with and without reimbursement, incurring charges of $546 million.
- Charges per user averaged $100; charges per beneficiary were $25.
- Medicare reimbursements for hospital outpatient services were $324 million, approximately 86 percent of reimbursements for all outpatient services.

Demographic Variations in Users, Charges, and Reimbursement

- Differences in user rates by age were small, but average incurred charges per user decreased with age. The amount reimbursed per beneficiary also decreased with age, from $15.70 for those 65-69 to $12.48 for those 85 and over.
- Differences in user rates by sex were also small, but men incurred higher charges than women, $107 per user compared to $96. Average amounts reimbursed per beneficiary were $15.79 for men and $14.03 for women.
- Differences in user rates by race reflected differences in where beneficiary lived:
  - In metropolitan areas, black user rates (310 per 1,000 enrolled) exceeded those of whites (246 per 1,000) by 26 percent; average charges per user for blacks ($160) were 48 percent higher than for

whites ($108); average charges per beneficiary for blacks ($49.55) were 86 percent higher than for whites ($26.59).

.. In nonmetropolitan areas, user rates among whites (253 per 1,000 enrolled) exceeded those of blacks (198 per 1,000 enrolled) by 27 percent; average incurred charges per user were about 4 percent higher for whites ($72) than blacks ($69); average charges per white beneficiary ($18.12) were 32 percent higher than for blacks ($13.68).

HOSPITAL OUTPATIENT CLINIC AND EMERGENCY SERVICES, 1975

. Hospital outpatient clinics are a more important source of primary care to aged blacks than to white persons, particularly in metropolitan areas.

.. Among blacks, 120 per 1,000 beneficiaries use hospital outpatient clinic services compared to 23 per 1,000 among whites. In metropolitan areas, 158 per 1,000 black beneficiaries used clinic services compared to 30 per 1,000 white beneficiaries. In nonmetropolitan areas, the user rates were 32 per 1,000 blacks and 10 per 1,000 whites.

.. In metropolitan counties blacks made 836 clinic visits per 1,000 beneficiaries during 1975, while white beneficiaries made only 130 visits per 1,000 beneficiaries. In nonmetropolitan areas, the rates were 109 and 27 visits respectively.

.. Clinic charges per black beneficiary in metropolitan counties was $11.17 compared to $2.59 for whites. The respective amounts in non-metropolitan areas were $1.84 and $.32.

- Blacks made greater use of emergency room services than whites in metropolitan and nonmetropolitan areas.
  - In metropolitan areas, 131 per 1,000 black beneficiaries used emergency room services compared to 98 per 1,000 whites. In metropolitan areas, blacks made 209 emergency room visits per 1,000 beneficiaries; whites made 138 visits per 1,000 beneficiaries. Charges per beneficiary were $4.16 for blacks and $2.65 for whites.
  - In nonmetropolitan areas, 98 per 1,000 black beneficiaries used emergency room services compared to 95 per 1,000 whites. Blacks made 157 visits per 1,000 beneficiaries compared to 143 visits per 1,000 whites. Average charges per beneficiary were $1.83 and $1.86 for whites and blacks, respectively.

Organization of Report

The remainder of this report is organized into four parts followed by appendices. The four parts cover:

1) Trends in the use and reimbursement of outpatient services by the aged between 1967 and 1975;

2) Demographic variations in the use, charges, and reimbursement of hospital outpatient services in 1975;

3) Use of clinic and emergency room services of hospital outpatient departments. Special attention is given to the use of clinics by the aged blacks residing in metropolitan areas. This section contrasts whites and blacks in the physician services received in the hospital clinics and physicians' offices; and

4) Conclusions derived from this study.

TRENDS IN USE AND REIMBURSEMENT OF OUTPATIENT SERVICES, 1967-1975

Table 1 shows that between 1967 and 1975 the number of aged persons using reimbursed outpatient services per 1,000 enrolled in SMI increased faster than those using reimbursed physicians' services. The former rate increased 105 percent, while the reimbursed user rate of physicians' and other medical services increased 45 percent.[2] Between 1967 and 1975, the average annual rate of growth of reimbursed outpatient users per 1,000 enrolled, 9.4 percent, was much greater than the 4.7 percent growth rate for users of physicians' services.

For the same period, reimbursements for outpatient care rose 879 percent (from $38 million in 1967 to $374 million in 1975) compared to 149 percent for physicians' services. The annual average growth rate of outpatient reimbursement was 33.0 percent, far above the 12.1 percent growth rate of physicians' reimbursements. Table 2 indicates that outpatient reimbursements increased at a greater rate than any other service covered by Medicare between 1967 and 1975. This growth rate increased the reimbursement for outpatient services from 0.9 percent of total Medicare payments in 1967 to 2.9 percent in 1975. Physicians' services decreased as a proportion of total reimbursements from 28.9 to 24.0 percent during the same period. Reimbursements for outpatient services, based on these trends, could very well continue to increase as a proportion of Medicare payments. Thus,

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[2] Persons using reimbursed SMI services are defined as the number of eligible persons enrolled for Medicare receiving services for which there was reimbursement.

Table 1 - Use of Outpatient and Physician Services by the Aged: Number of Persons Reimbursed and Amount Reimbursed, 1967-75, (In Thousands).

Year of Service	Outpatient Services			Physician and Other Medical Services		
	Persons Served			Persons Served		
	Number	Per 1,000 Enrolled	Reimbursement	Number	Per 1,000 Enrolled	Reimbursement
1967 1/	1,511	84	$ 38,256	6,415	359	$ 1,233,845
1969	1,629	85	78,633	7,994	417	1,609,008
1971	2,171	109	124,534	8,801	441	1,847,677
1973	2,624	125	179,152	9,529	456	2,111,636
1975	3,768	172	374,421	11,396	519	3,050,222
Percent Change 1967-75	149	105	879	78	45	149
Average Annual percent change 1967-75	12.1	9.4	33.0	7.4	4.7	12.1

1/ Prior to April 1, 1968, outpatient services were covered by hospital insurance and Supplementary Medical Insurance (SMI). Figures show outpatient services under SMI.

Source: Section 1, Summary, Utilization and Reimbursement by Person.

Table 2 - Distribution of Medicare Reimbursements to the Aged by Type of Service, 1967 and 1975.

Type of Service	1967 Reimbursement		1975 Reimbursement		Average Annual Percent Increase 1967-1975
	Amount (millions)	Percent Distribution	Amount (millions)	Percent Distribution	
Total	$ 4,239	100.0	$ 12,689	100.0	14.7
Hospital inpatient	2,659	62.7	8,840	69.7	16.2
Skilled nursing facility	274	6.5	233	1.8	-2.0
Outpatient	38	.9	374	2.9	33.0
Physician and other medical	1,224	28.9	3,050	24.0	12.1
Home health agency (HI and SMI)	43	1.0	192	1.5	20.5

Source: Section 1, Summary, Utilization and Reimbursement by Person.

Medicare actuaries estimate that for fiscal year 1983, the amount reimbursed for physicians' services will be 4.4 times that of outpatient services, compared to 32.0 times in 1967 and 8.1 times in 1975 (Health Care Financing Administration, 1979)

HOSPITAL OUTPATIENT SERVICES: USE AND CHARGES, 1975

Hospital outpatient departments provide most of the outpatient services covered by Medicare. Hospital outpatient reimbursements to the aged in 1975 ($324 million) were 86 percent of all outpatient reimbursements. Most hospital outpatient services are provided by short-stay hospitals, but the outpatient services of long-stay general hospitals, tuberculosis hospitals, psychiatric hospitals, provider-operated community health centers, and hospital satellite treatment centers for kidney disease are also included in this analysis.

As shown in Table 3, nearly 5.5 million aged persons used covered hospital outpatient services, with and without reimbursement, and incurred charges of $546 million in 1975. Covered charges per user averaged $100, and average reimbursements per user were $59.

Use by Age, Sex, and Race

Table 3 shows that about 248 aged beneficiaries per 1,000 enrolled used hospital outpatient services in 1975. The proportion of beneficiaries using these services varied little by age. However, the incurred charges per user and per beneficiary decreased with age. This suggests that the intensity of use decreases with age. The amount reimbursed per user and per beneficiary also decreased with age.

TABLE 3.--Use of Hospital Outpatient Services by the Aged: Users, Charges, and Reimbursement by Age, Race, and Sex, 1975 1/

Age, sex, and race	Enrollees	Users		Charges			Reimbursement		
		Number	Per 1,000 enrolled	Amount (in thousands)	Per user	Per beneficiary	Amount (in thousands)	Per user	Per beneficiary
All persons									
Total, 65 years and over	21,945 2/	5,452,020	248.4	$546,095	$100.16	$24.88	$323.563	$59.35	$14.74
Age									
65-69	7,388	1,823,620	246.8	194,395	106.60	26.31	115,969	63.59	15.70
70-74	5,828	1,451,680	249.1	149,179	102.76	25.60	88,975	61.29	15.27
75-79	4,206	1,057,400	251.4	102,471	96.91	24.36	60,481	57.20	14.38
80-84	2,727	677,960	248.6	61,485	90.69	22.55	35,714	52.68	13.10
85 and over	1,797	441,360	245.6	38,565	87.38	21.46	22,424	50.81	12.48
Sex									
Men	8,873	2,183,120	246.0	232,877	106.67	26.25	140,146	64.20	15.79
Women	13,073	3,268,900	250.1	313,218	95.82	23.96	183,417	56.11	14.03
Race									
White	19,575	4,838,540	247.2	465,665	96.24	23.79	274,352	56.70	14.02
Black	1,597	434,180	271.9	60,721	139.85	38.33	37,277	85.88	23.34

1/ Based on bills processed and recorded through December, 1976.
2/ Includes race unknown.

A slightly higher proportion of women (250 per 1,000 beneficiaries) used hospital outpatient services than men (246 per 1,000), but men incurred higher average charges and received higher average reimbursements.

In this report, race differences in the use of hospital outpatient services are presented only for whites and blacks rather than contrasting whites with "all other races" as is usually done in other Medicare program analyses. Nonwhites other than blacks constitute less then 10 percent of the nonwhites. In the West, however, nonwhites other than black constitute about 60 percent of all nonwhites. These are mainly American Indians and Orientals. American Indians receive a significant proportion of their health care services from the Indian Health Service. In 1975, these services were not billed to the Medicare program though the person receiving the services may have been a Medicare beneficiary. Persons of Chinese origin or descent are deterred from using hospital outpatient services by two factors -- a highly negative perception of hospitals and a high level of reliance on practitioners of "Chinese medicine" for treatment of illness. It appears that these orientations tend to be postively correlated with age (Campbell and Chang, 1973). Because the retention of these groups in the computation of utilization rates would tend to depress the tabulated rates for nonwhites, the authors have chosen to contrast only the differences between aged whites and blacks.

Blacks used hospital outpatient services to a notably greater degree than whites. A higher proportion of black beneficiaries (262 per 1,000) used

hospital outpatient services than whites (247 per 1,000). The average charges incurred per user was 45 percent higher among blacks ($140) than among whites ($96). Reflecting more widespread use, the difference in the average charge per beneficiary was even larger, about 61 percent ($38 for blacks and $24 for whites). Reimbursement for hospital outpatient services was about 66 percent higher per beneficiary for blacks ($23) than for whites ($14).

Use by Race and Type of County

Table 4 shows enrollment, users, user rates, charges, and average charges for blacks and whites with known residence by metropolitan and non-metropolitan residence within the four U.S. census regions. Blacks and whites whose residence by type of county is not known are not included.[3] Metropolitan counties are defined as those that comprise standard metropolitan statistical areas (SMSA). These then include inner city poverty areas where there are shortages of physicians in private practice.

As shown in Table 4, a higher proportion of aged black beneficiaries use hospital outpatient services in every region. In the metropolitan areas of each region the rate of users among blacks was over 25 percent greater than whites. Nationally, the user rate among black beneficiaries in metropolitan

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[3]Approximately 2.8 percent of the SMI beneficiaries in 1975 could not be identified by race or county of residence. Among persons of known race, type of county of residence could not be identified for 0.1 percent.

TABLE 4.-Use of hospital outpatient services by the aged: Enrollment, users, and charges by race with known region and type of county, 1975

Region and type of county of residence	SMI Enrollment 1/				Users				Charges					
	White		Black		White		Black		White			Black		
	Number	Percent	Number	Percent	Number	Per 1,000 beneficiaries	Number	Per 1,000 beneficiaries	Amount	Per user	Per beneficiary	Amount	Per user	Per beneficiary
United States	19,432	100.0	1,583	100.0	4,824	248.2	432	274.4	$464,667	$ 96.32	$23.91	$60,587	$140.15	$38.46
Metropolitan counties	13,287	68.4	1,113	70.3	3,271	246.2	339	310.1	353,301	108.01	26.59	54,169	159.79	49.55
Nonmetropolitan counties	6,145	31.6	470	29.7	1,553	252.7	93	198.2	111,366	71.71	18.12	6,418	69.01	13.68
Northeast	5,026	100.0	243	100.0	1,472	292.9	87	357.9	158,860	106.56	31.21	17,164	197.09	70.54
Metropolitan counties	4,160	82.8	237	97.4	1,167	280.6	85	357.1	133,668	114.54	32.14	16,984	199.81	71.35
Nonmetropolitan counties	866	17.2	6	2.6	305	352.1	2	374.8	23,192	76.04	26.77	180	90.17	33.80
North Central	5,555	100.0	283	100.0	1,384	249.1	92	325.4	117,257	84.72	21.10	13,512	146.82	47.78
Metropolitan counties	3,304	59.5	260	91.8	850	257.2	86	330.5	80,699	94.94	24.42	13,093	152.24	50.32
Nonmetropolitan counties	2,251	40.5	23	8.2	534	237.2	6	265.1	36,558	68.46	16.24	419	69.86	18.51
West	3,178	100.0	90	100.0	785	246.7	29	324.4	99,120	126.28	31.15	6,043	207.12	67.19
Metropolitan counties	2,480	78.0	86	95.3	589	237.4	28	324.5	81,341	138.10	32.78	5,945	212.33	68.90
Nonmetropolitan counties	698	22.0	4	4.7	196	280.1	1	335.2	17,779	90.71	25.41	98	98.44	33.00
South	5,672	100.0	966	100.0	1,183	208.6	224	232.3	91,438	77.30	16.12	23,885	106.67	24.78
Metropolitan counties	3,343	58.9	530	54.9	665	199.0	140	264.7	57,602	86.62	17.24	18,176	129.83	34.37
Nonmetropolitan counties	2,329	41.0	436	45.1	518	222.4	84	192.7	33,836	65.32	14.53	5,709	67.96	13.10

NOTE: Detail may not add to total because of rounding.

1/ As of July 1, 1975.

areas was 310 per 1,000 compared to 246 per 1,000 for whites. Except for the South, the user rates among blacks was also higher than whites in nonmetropolitan areas. Since more than 60 percent of the aged blacks reside in the South, the notably lower user rate among blacks in the nonmetropolitan areas of the South (193 per 1,000 compared to a range of 265 to 375 per 1,000 in the other regions) dominated the national picture. Nationally, the user rate among blacks in nonmetropolitan areas (198 per 1,000 beneficiaries) was about 78 percent that of whites (253 per 1,000).

Based on average incurred charges per user, blacks using hospital outpatient services make more intensive use of these facilities than do whites. In every area, blacks incurred higher average charges per user than whites. In metropolitan areas, whites using hospital outpatient services incurred average charges ($108) that were about two-thirds of those incurred by blacks ($160). In the metropolitan areas, charges per beneficiary, which are the product of the proportion of beneficiaries using services and the average charges per user, were almost twice as much for blacks ($50) as for whites ($27). Except in the South, charges per beneficiary were also higher for blacks in nonmetropolitan areas, but the differences were not as large as in metropolitan areas. The South, again because of the preponderance of aged blacks living there (about 93 percent of all aged blacks living in non-metropolitan areas), dominated the national picture.

The above data suggest that the use of hospital outpatient departments in metropolitan areas is more widespread and more intense among blacks than whites. This will be discussed further in relation to the use of hospital outpatient clinics as a locus of primary care medical services.

Use by Region and State

As shown in Table 5, hospital outpatient user rates varied widely by region. The highest rate was in the Northeast, with 295 users per 1,000 beneficiaries, and the lowest was in the South, with 212 users per 1,000. By geographic division, the variation was even larger. New England was highest with 33 percent of its beneficiaries using outpatient services, and the West South Central division was lowest with 17 percent.

Table 5 also shows that average charges ranged from $131 per user in the West to $82 per user in the South. The average charge per beneficiary, a measure which reflects the proportion of beneficiaries using services, was highest in the Northeast ($33). However, since the proportion of beneficiaries exceeding the SMI deductible tends to be highest in the West, the average amount reimbursed per beneficiary was highest in the West ($21).

Average charges demonstrated greater variation by geographic division; the Pacific States were highest, $139 per user, and the East South Central States were lowest, $66 per user. California led in average charges and reimbursements per user, $150 and $101, respectively. However, because of its greater user rate, the average charge and reimbursement per beneficiary were highest in Massachusetts, $42 and $28 per beneficiary, respectively. The user rate in Massachusetts, 358 per 1,000 beneficiaries, was second only to Maine's, 411 per 1,000.

The ratio of reimbursements to covered charges averaged 59 percent nationally, and was highest in the Pacific States, 67 percent, and lowest in the East South Central States, 53 percent.

TABLE 5.--Use of hospital outpatient services by Aged: Users, charges, and reimbursement by Residence, 1975 1/

Area of residence	Users		Charges			Reimbursement			
	Number	Per 1,000 enrolled	Amount (in thousands)	Per user	Per beneficiary	Amount (in thousands	Per user	Per beneficiary	As percent of charges
All areas	5,452,020	248.4	$546,095	$100.16	$24.88	$323,563	$59.35	$14.74	59.3
United States	5,434,480	249.3	544,883	100.26	24.99	322,871	59,41	14.81	59.3
Regions									
Northeast	1,603,820	295.0	179,039	111.63	32.93	104,640	65.24	19.25	58.4
North Central	1,516,580	252.5	134,035	88.98	22.32	75,779	49.97	12.62	56.5
South	1,449,740	211.8	119,130	82.17	17.40	68,244	47.07	9.97	57.3
West	862,460	247.3	112,548	130.50	32.27	74,143	85.97	21.26	65.9
Divisions									
New England	448,660	332.1	46,640	103.95	34.52	29,626	66.03	21.93	63.5
Middle Atlantic	1,155,160	282.7	132,399	114.62	32.40	75,104	64.94	18.36	56.7
East North Central	1,079,620	269.8	96,236	89.14	24.05	53,872	49.90	13.46	56.0
West North Central	436,960	217.9	37,799	86.50	18.85	21,907	50.14	10.93	58.0
South Atlantic	814,300	239.0	71,408	87.69	20.96	41,322	50.75	12.13	57.9
East South Central	284,160	201.8	18,842	66.31	13.38	10,028	35.29	7.12	53.2
West South Central	351,280	173.1	28,880	82.21	14.23	16,895	48.09	8.32	58.5
Mountain	208,040	253.7	21,753	104.57	26.53	13,628	65.51	16.62	62.6
Pacific	654,420	245.3	90,793	138.74	34.03	60,515	92.47	22.68	66.7
States									
New England:									
Maine	52,740	411.2	4,227	80.15	32.96	2,449	46.43	19.09	57.9
New Hampshire	30,340	342.2	1,970	64.92	22.22	1,120	36.90	12.63	56.8
Vermont	18,860	356.1	1,196	63.40	22.58	703	37.26	13.27	58.8
Massachusetts	234,640	358.2	27,576	117.52	42.10	18,102	76.76	27.50	65.3
Rhode Island	37,120	333.3	3,585	96.57	32.19	2,327	62.68	20.89	64.9
Connecticut	74,960	238.4	8,086	107.87	25.72	5,017	66.93	15.96	62.0
Middle Atlantic:									
New York	532,580	267.4	72,983	137.04	36.64	42,682	80.14	21.43	58.5
New Jersey	171,980	229.2	19,274	112.07	25.69	11,960	69.54	15.94	62.1
Pennsylvania	70,500	221.1	4,832	68.54	15.15	2,518	35.71	7.90	52.1
East North Central:									
Ohio	256,140	247.1	20,274	79.15	19.56	11,156	43.55	10.76	55.0
Indiana	141,320	273.0	11,200	79.25	21.64	6,299	44.58	12.17	56.2
Illinois	288,180	255.5	24,693	85.68	21.88	13,698	47.53	12.14	55.5
Michigan	265,640	327.4	28,362	106.77	34.96	15,784	59.42	19.45	55.7
Wisconsin	128,340	252.8	11,707	91.22	23.06	6,934	54.03	13.66	59.2
West North Central:									
Minnesota	99,220	227.9	10,568	106.51	24.27	6,555	66.06	15.06	62.0
Iowa	90,260	250.4	7,044	78.04	19.54	4,118	45.63	11.43	58.5
Missouri	119,780	205.1	9,929	82.89	17.00	5,171	43.17	8.85	52.1
North Dakota	13,420	184.8	1,138	84.83	15.68	694	51.71	9.56	61.0
South Dakota	13,360	159.6	776	58.12	19.28	391	29.26	4.67	50.3
Nebraska	34,200	180.7	2,976	86.71	15.67	1,699	49.51	8.95	57.1
Kansas	66,600	238.5	5,367	80.59	19.22	3,279	49.23	11.74	61.1
South Atlantic:									
Delaware	16,760	336.3	1,252	74.71	25.12	660	39.38	13.24	52.7
Maryland	94,100	292.4	10,575	112.38	32.86	6,452	68.57	20.05	61.0
Dist. of Columbia	15,600	241.4	2,278	146.03	35.25	1,515	97.10	23.44	66.5
Virginia	89,780	220.9	7,818	87.08	19.24	4,650	51.80	11.44	59.5
West Virginia	66,980	319.4	4,577	68.33	21.82	1,842	27.51	8.79	40.3
North Carolina	121,920	253.4	9,072	74.41	18.86	4,635	38.01	9.63	51.1
South Carolina	53,120	237.6	3,437	64.70	15.37	1,896	35.69	8.48	55.2
Georgia	105,820	254.2	9,516	89.93	22.86	5,604	52.96	13.46	58.9
Florida	250,220	202.7	22,883	91.45	18.54	14,067	56.22	11.40	61.5
East South Central:									
Kentucky	78,380	216.4	4,730	60.34	13.06	2,191	27.95	6.05	46.3
Tennessee	83,420	193.1	5,959	71.43	13.79	3,255	39.01	7.53	54.6
Alabama	71,640	194.8	4,868	67.95	13.24	2,663	37.17	7.24	54.7
Mississippi	50,720	206.4	3,286	64.78	13.37	1,920	37.85	7.81	58.4
West South Central:									
Arkansas	48,780	185.2	3,671	75.25	13.94	2,151	44.10	8.17	58.6
Louisiana	70,500	221.1	4,832	68.54	15.15	2,518	35.71	7.90	52.1
Oklahoma	50,960	158.8	4,894	96.03	15.25	3,002	58.92	9.36	61.4
Texas	131,040	160.7	15,484	85.53	13.74	9,223	50.95	8.19	59.6
Mountain:									
Montana	16,260	219.9	1,428	87.83	19.31	886	54.48	11.98	62.0
Idaho	26,300	337.5	1,877	71.38	24.09	994	37.80	12.76	53.0
Wyoming	9,000	271.7	571	63.43	17.23	297	33.02	8.97	52.1
Colorado	55,440	268.6	6,851	123.57	33.19	4,544	81.96	22.01	66.3
New Mexico	22,500	254.8	1,904	84.61	21.56	1,111	49.36	12.58	58.3
Arizona	45,080	213.6	5,556	123.26	26.33	3,571	79.21	16.92	64.3
Utah	23,660	273.1	2,275	96.15	26.26	1,378	58.23	15.90	60.6
Nevada	9,800	229.6	1,293	131.98	30.30	848	86.55	19.87	65.6
Pacific:									
Washington	77,720	218.7	7,046	90.65	19.83	4,336	55.79	12.20	61.5
Oregon	53,760	216.2	5,635	104.82	22.66	3,538	65.81	14.23	62.8
California	508,980	254.3	76,508	150.32	38.23	51,613	101.41	25.79	67.5
Alaska	2,380	347.9	240	100.67	35.02	147	61.67	21.46	61.3
Hawaii	11,580	207.6	1,364	117.78	24.45	881	76.05	15.79	64.6
Residence unknown	1,880	N.A.	131	69.65	--	64	34.18	N.A.	49.1
Other areas:									
Puerto Rico	15,480	132.1	1,036	66.91	8.84	594	38.37	5.07	57.3
All others 2/	920	198.1	49	53.38	10.57	20	21.30	4.22	39.9
Foreign countries	1,140	40.2	127	111.83		78	68.83	2.89	61.6

1/ Based on data recorded December, 1976.
2/ Consists of Guam, Virgin Islands, and other outlying areas.

The percent of charges reimbursed by Medicare was highest in California, 68 percent, and lowest in West Virginia, 40 percent, as indicated in Table 5. These percentages reflect the combined effects of the proportion of users of services who have exceeded the SMI deductible and qualified to have reimbursements made on their behalf, and the relationship between the hospitals' schedule of charges for outpatient services and the reimbursable costs. A distribution of the ratio of reimbursements to charges by State for outpatient services used by aged beneficiaries is shown in Table 6. Reimbursement rates for most States ranged from 55 percent to 65 percent.

TABLE 6.-Use of Hospital Outpatient services by the Aged: Reimbursements as a Percent of Charges by State, 1975

Reimbursements as a percent of charges	Number of States 1/
Total	51
40.0-44.9	1
45.0-49.9	1
50.0-54.9	10
55.0-59.9	18
60.0-64.9	16
65.0-69.9	5

1/ Includes District of Columbia

Use by Type of Service

As shown in Table 7, the largest proportion of the 5.5 million users of hospital outpatient services used radiology services, (2.8 million), laboratory services (2.6 million), and emergency room services (2.2 million).

TABLE 7.-Use of hospital outpatient services by the aged: Number and percent of users by type of service, sex, and race, 1975

Sex and race	Total 1/	Clinic	Emergency Room	Laboratory	Radiology	Pharmacy	Physical therapy	Other
	Number of users							
All persons 2/	5,452,020	675,060	2,157,360	2,585,840	2,787,660	832,380	206,520	1,988,320
Sex								
Men	2,183,120	276,260	890,780	1,033,080	1,064,020	358,020	73,760	861,720
Women	3,268,900	398,800	1,266,580	1,552,760	1,723,640	474,360	132,760	1,126,600
Race								
White	4,838,540	455,980	1,897,930	2,290,060	2,496,060	735,440	189,100	1,763,700
Black	434,180	191,400	192,320	209,400	199,840	70.340	10,740	159,480
	Percent of Users							
All persons 2/	100.0	12.4	39.6	47.4	51.1	15.3	3.8	36.5
Sex								
Men	100.0	12.7	40.8	47.3	48.7	16.4	3.4	39.5
Women	100.0	12.2	38.7	47.5	52.7	14.5	4.1	34.5
Race								
White	100.0	9.4	39.2	47.3	51.6	15.2	3.9	36.5
Black	100.0	44.1	44.3	48.2	46.0	16.2	2.5	36.7
	Users per 1,000 enrolled							
All persons 2/	248.4	30.8	98.3	117.8	127.0	37.9	9.4	90.6
Sex								
Men	246.0	31.1	100.4	116.4	119.9	40.4	8.3	97.1
Women	250.1	30.5	96.9	118.8	131.9	36.3	10.2	86.2
Race								
White	247.2	23.3	97.0	117.0	127.5	37.6	9.7	90.1
Black	271.9	119.9	120.4	131.1	125.1	44.0	6.7	99.9

1/ The sum of the users of each service exceeds the total users because persons are counted individually for each service but only once in the total column.

2/ Includes unknown races.

To compare the use of hospital outpatient services by race and sex, Table 7 presents the number and percent of users, and the proportion of beneficiaries using each type of service. For most services, the user rates were nearly the same for both sexes.

The most notable difference between blacks and whites was in the whites was in the use of clinic services. Among blacks using hospital outpatient services, 44 percent used clinic services, while only 9 percent of whites using hospital outpatient services used clinic services. From the viewpoint of the beneficiary population as a whole, the difference between blacks and whites in the use of hospital and outpatient clinic services was even wider, 120 per 1,000 beneficiaries for blacks to 23 per 1,000 for whites, a fivefold difference. Blacks also had higher emergency room user rates (120 per 1,000 to 97 per 1,000 for whites). For the other services race differences in user rates were small.

Data on charges by type of services are shown in Table 8. The percent distribution of charges by type of service was smaller for men and women. By race, clinic charges accounted for 8 percent of charges for whites and 31 percent for blacks. Radiology charges were 29 percent of total charges among white persons but only 19 percent for minority races.

The average charge in 1975 for all hospital outpatient services was $100 per user, with the highest average charge being $167 for users of physical therapy services (probably because several treatment sessions are required). The lowest charge, $10 per user, was for pharmacy services.

TABLE 8.-Use of hospital outpatient services by the aged: Amount and percent distribution of charges by type of service, sex, and race, 1975

Sex and race	Total 1/	Clinic	Emergency Room	Laboratory	Radiology	Pharmacy	Physical therapy	Other
	Charges (In thousands)							
All persons 1/	$546,095	$57,294	$53,898	$106,537	$152,809	$8,416	$34,417	$132,724
Sex								
Men	232,877	22,464	23,089	43.735	60,841	4,053	11,834	66,860
Women	313,218	34,830	30,809	62,802	91,968	4,363	22,583	65,864
Race								
White	465,665	36,503	46,604	90,842	136,353	7,433	31,513	116,416
Black	60,721	18,580	5,511	11,877	11,348	708	1,820	10,876
	Percent distribution							
All persons 1/	100.0	10.5	9.9	19.5	28.0	1.5	6.3	24.3
Sex								
Men	100.0	9.6	9.9	18.8	26.1	1.7	5.1	28.7
Women	100.0	11.1	9.8	20.1	29.4	1.4	7.2	21.0
Race								
White	100.0	7.8	10.0	19.5	29.3	1.6	6.8	25.0
Black	100.0	30.6	9.1	19.6	18.7	1.2	3.0	17.9
	Charges per user							
All persons 1/	$100.16	$84.87	$24.98	$41.20	$54.82	$10.11	$166.65	$66.75
Sex								
Men	106.67	81.32	25.92	42.33	57.18	11.32	160.44	77.59
Women	95.82	87.34	24.32	40.45	53.36	9.20	170.10	58.46
Race								
White	96.24	80.05	24.56	39.65	54.63	10.11	166.65	66.01
Black	139.85	97.07	28.66	56.72	56.79	10.07	169.48	68.20
	Charges per beneficiary							
All persons 1/	$24.88	$2.61	$2.46	$4.85	$6.96	$ .38	$1.57	$6.05
Sex								
Men	26.24	2.53	2.60	4.93	6.86	.46	1.33	7.53
Women	23.96	2.66	2.36	4.81	7.04	.33	1.74	5.04
Race								
White	23.79	1.87	2.38	4.64	6.97	.38	1.62	5.95
Black	38.03	11.64	3.45	7.44	7.10	.44	1.14	6.81

1/ Includes unknown races.

Medicare does not pay for drugs for outpatients except for diagnostic purposes or when an injection that cannot be self-administered is given as part of a physician's services. Radiology and "other" charges per user were higher for men than women; other differences were not statistically significiant. Average total charges for outpatient services were higher among blacks than whites. Clinic and laboratory services showed the largest differences, as blacks average $17 more per user than whites for each of these services.

When the incurred charges are examined in relation to their distribution among the entire beneficiary population of blacks and whites, the significance of hospital outpatient clinic services for blacks are more apparent. The average charge per beneficiary for clinic services is six times higher for blacks ($11.64) than for whites ($1.87) and this reflects the combined effects of the higher user rates among blacks as well as the higher charge incurred per person. The average charge per black beneficiary is higher, also, for emergency room and laboratory services though not to the same degree as clinic services.

CLINIC AND EMERGENCY ROOM USE, 1975

This section discusses data on the use of hospital outpatient clinics and emergency room services by age, sex, race, and residence. Because of notable race differences, a more detailed examination of race differences by residence in metropolitan and nonmetropolitan areas is presented. Data from the Current Medicare Survey (CMS) from 1975 are presented to examine

race differences in the use of hospital outpatient clinic and emergency room services in the broader context of differences in the sources of ambulatory medical care - principally primary care.

Use by Age, Sex, and Race

Table 9 shows that during 1975, about 675,000 aged beneficiaries (31 per 1,000 enrollees) made a total of 3 million clinic visits,[4] or an average of 4.5 visits per user. When the visits are distributed across all beneficiaries, there were 139 visits per 1,000 beneficiaries. Emergency room services were used by 2.2 million beneficiaries (98 per 1,000 enrolled) who made 3.2 million visits - an average of 1.5 visits per user or 148 visits per 1,000 beneficiaries.

The use of these services by age shows slightly opposite trends. The proportion of beneficiaries using clinic services shows a drop-off for those aged 80 years and over. The average number of visits per user and the average charge per beneficiary also decreased. This leads to the conclusion that there is a general decrease in the use of clinic services for beneficiaries 80 years and over. On the other hand, there is a perceptible jump in the proportion of beneficiaries using emergency room services among those 80 and over. The proportion of beneficiaries using emergency room services tends to increase with age. These data suggest there is decreased

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[4]The number of visits reported by a hospital on Form 1483 is determined by the number of separate charges for services in the various clinics of a hospital outpatient department. For example, an enrollee incurring separate charges for services, on the same day, in an eye and an orthopedic clinic is counted as having two visits.

TABLE 9.-Use of hospital outpatient clinic and emergency services by the aged: Users, visits, and charges by age, sex, and race, 1975

Age, sex, and race	Users		Visits			Charges			
	Number	Per beneficiary	Visits	Visits per user	Per 1,000 beneficiaries	Total (In thousands)	Per visit	Per user	Per beneficiary
	Clinic								
All persons	675,060	30.8	3,010,880	4.5	138.6	$57,294	$19.03	84.87	2.61
65-69	231,700	31.4	1,031,420	4.5	141.3	19,383	18.79	83.66	2.63
70-74	185,440	31.8	839,860	4.5	143.1	16,119	19.19	86.92	2.76
75-79	133,920	31.8	610,060	4.6	143.3	11,533	18.90	86.12	2,74
80-84	78,180	28.7	345,720	4.4	126.3	6,674	19.30	85.37	2.45
85 and over	45,820	25.5	183,820	4.0	102.0	3,586	19.51	78.26	2.00
Sex									
Men	276,260	31.1	1,175,620	4.3	133.7	22,464	19.11	81.31	2.53
Women	398,800	30.5	1,835,260	4.6	140.3	34,830	18.98	87.34	2.66
Race									
White	455,980	23.3	1,903,760	4.2	97.9	36,503	19.17	80.05	1.87
Black	191,400	119.9	990,660	5.2	623.5	18,580	18.76	97.07	11.64
	Emergency room								
All persons	2,157,360	98.3	3,164,400	1.5	147.5	53,898	17.03	24.98	2.46
65-69	701,360	94.9	1,037,720	1.5	142.4	17,688	17.05	25.22	2.39
70-74	565,500	97.0	843,560	1.5	145.5	14,246	16.89	25.19	2.44
75-79	419,900	99.8	610,840	1.5	149.7	10,445	17.10	24.87	2.48
80-84	283,840	104.1	404,440	1.4	145.7	6,932	17.14	24.42	2.54
85 and over	186,740	103.9	267,840	1.4	145.5	4,587	17.13	24.56	2.55
Sex									
Men	890,780	100.4	1,347,560	1.5	150.6	23,089	17.13	25.92	2.60
Women	1,266,580	96.9	1,816,840	1.4	135.7	30,809	16.96	24.32	2.36
Race									
White	1,897,960	97.0	2,763,500	1.5	145.5	46,604	16.86	24.55	2.38
Black	192,320	120.4	303,620	1.6	192.6	5,511	18.15	28.66	3.45

regular use of clinic services, probably as a result of age-related factors. Older beneficiaries may become more vulnerable to crises which require emergency room treatment.

Significant sex differences in the use of clinic and emergency room services are not apparent. There are, however, differences by race in the use of clinic and emergency room services. A much higher proportion of blacks (120 per 1,000) use clinic services than whites (23 per 1,000). Blacks also make more clinic visits (624 visits per 1,000 beneficiaries) than whites (98 visits per 1,000 beneficiaries). The charges incurred per beneficiary are six times higher for blacks ($11.64) than for whites ($1.87). Emergency room services also are used more by blacks than whites. A higher proportion of blacks (120 per 1,000 beneficiaries) used emergency room services than whites (97 per 1,000). Blacks made 193 emergency room visits per 1,000 beneficiaries compared to 146 visits per 1,000 white beneficiaries. The charges incurred per user were higher for blacks ($28.66) than for whites ($24.55). Charges per beneficiary were nearly 50 percent higher for blacks ($3.45) than for whites ($2.38). These race differences are related to residence in metropolitan and nonmetropolitan counties.

Use by Race and Type of County

Table 10 shows that hospital and patient clinics are used much more extensively in metropolitan areas than in nonmetropolitan areas. About 40 beneficiaries per 1,000 enrolled used hospital clinic services in metropolitan areas (4.7 visits per user) compared to about 12 per 1,000 in nonmetropolitan areas

TABLE 10.-Use of hospital outpatient clinic services by the aged: Users, visits, and charges by residence and race, 1975

Region, type of county of residence and race	Users		Visits			Charges			
	Number	Per 1,000 beneficiaries	Number	Per user	Per 1,000 beneficiaries	Total (In thousands)	Per visit	Per user	Per beneficiary
United States	668,380	31.7	2,983,840	4.5	142.7	$56,900	$19.07	$85.13	$ 2.61
Metropolitan counties	589,620	39.6	2,758,260	4.7	186.1	54,014	19.58	91.61	3.63
White	392,260	29.5	1,726,980	4.4	129.8	34,391	19.91	87.67	2.59
Black	175,580	157.8	936,780	5.3	836.3	17,674	18.87	100.67	11.17
Nonmetropolitan counties	78,760	11.6	225,580	2.9	33.6	2,886	12.79	36.64	.43
White	61,020	9.9	166,760	2.7	26.7	1,942	11.65	31.83	.32
Black	15,060	32.1	51,500	3.4	109.1	861	16.72	57.17	1.84
Northeast	260,980	48.0	1,230,180	4.7	255.6	30,041	24.42	115.11	5.53
Metropolitan counties	251,500	55.6	1,206,140	4.8	266.9	29,677	24.68	118.00	6.56
White	191,380	46.0	865,820	4.5	207.0	21,123	24.40	110.37	5.08
Black	52,100	219.7	301,140	5.8	1,274.3	7,457	24.76	143.13	31.45
Nonmetropolitan counties	9,480	10.6	24,040	2.5	26.5	365	15.17	38.50	.41
White	9,080	10.5	23,080	2.5	26.3	352	15.24	38.77	.41
Black	140	22.3	420	3.0	66.9	6	15.16	42.86	.96
North Central	133,840	22.3	471,780	4.3	95.9	8,224	14.38	61.45	1.37
Metropolitan counties	115,900	31.7	522,820	4.5	142.7	7,812	14.94	67.40	2.14
White	71,640	21.7	288,060	4.0	86.8	3,682	12.87	51.40	1.12
Black	40,440	155.8	220,400	5.5	856.9	3,934	17.85	97.28	15.16
Nonmetropolitan counties	17,940	7.7	48,960	2.7	20.8	412	8.42	22.97	.18
White	16,880	7.5	45,400	2.7	20.3	377	8.30	22.33	.17
Black	360	15.5	1,400	3.9	60.5	21	14.88	58.33	.90
West	98,160	28.1	453,740	4.6	129.3	9,023	19.89	91.92	2.58
Metropolitan counties	86,220	31.6	418,600	4.9	154.8	8,571	20.48	99.41	3.14
White	68,520	27.6	328,620	4.8	132.5	6,462	19.66	94.31	2.60
Black	11,740	137.2	65,780	5.6	768.3	1,643	24.97	139.95	19.20
Nonmetropolitan counties	11,940	16.0	35,140	2.9	46.4	452	12.85	37.86	.61
White	10,820	15.5	32,000	3.0	46.5	413	12.89	38.17	.59
Black	200	47.9	840	4.2	201.2	12	14.21	60.00	2.87
South	175,400	25.6	728,140	4.2	107.5	9,612	13.20	54.80	1.40
Metropolitan counties	136,000	34.1	610,700	4.5	153.5	7,054	13.02	58.49	1.99
White	60,720	18.2	246,480	4.1	74.6	3,124	12.68	51.45	.94
Black	71,300	134.4	349,460	4.9	658.6	4,640	13.28	65.08	8.75
Nonmetropolitan counties	39,400	13.9	117,440	3.0	41.7	1,659	14.12	42.08	.58
White	24,240	7.3	66,280	2.7	19.7	801	12.09	33.04	.24
Black	14,360	32.9	48,840	3.4	119.9	822	16.83	57.24	1.88

(2.9 visits per user). The charges incurred for clinic services by beneficiaries in metropolitan areas ($3.63 per beneficiary) are about nine times higher than the average in nonmetropolitan areas ($.43 per beneficiary).

In all regions and in both metropolitan and nonmetropolitan areas, blacks use hospital outpatient clinic services to a greater extent than do whites. The metropolitan areas of the Northeast show the highest proportion of blacks using clinic services (220 per 1,000 beneficiaries). The lowest rate of use among blacks in metropolitan areas was in the South (134 per 1,000 beneficiaries) but even there the black rate was over seven times greater than for whites. In metropolitan areas, blacks averaged 5.3 visits per user compared to 4.4 for whites. The average charge per beneficiary in metropolitan areas was $11.17 for blacks and $2.59 for whites. The highest average charge per black beneficiary living in metropolitan areas was $31.45 in the Northeast; lowest was in the South, $8.75. Among whites in metropolitan areas, the highest charge per beneficiary was in the Northeast ($5.08) and lowest in the South ($.94).

In nonmetropolitan counties, the user rate among blacks (32 per 1,000 beneficiaries) was about triple the rate for whites (10 per 1,000). The average number of visits per 1,000 black beneficiaries in nonmetropolitan areas was 109 compared to 27 per 1,000 whites. The average charge per beneficiary in nonmetropolitan areas was about six times higher for blacks ($1.84) than for whites ($.32).

Table 11 shows that metropolitan and nonmetropolitan differences in the use of emergency room services were not as general as for clinic services.

TABLE 11.-Use of hospital outpatient emergency room services by the aged: Users, visits, and charges by residence and race, 1975

Region, type of county of residence and race 1/	Users		Visits			Charges			
	Number	Per 1,000 beneficiaries	Number	Per user	Per 1,000 beneficiaries	Total (In thousands)	Per visit	Per user	Per beneficiary
United States	2,142,580	98.3	3,142,960	1.5	147.5	$53,546	$17.04	$24.99	$ 2.46
Metropolitan counties	1,494,900	100.4	2,151,680	1.4	140.6	41,095	19.10	27.49	2.76
White	1,306,560	98.3	1,860,360	1.4	137.6	35,213	18.93	26.96	2.65
Black	145,700	130.9	230,360	1.6	209.4	4,629	20.12	31.77	4.16
Nonmetropolitan counties	647,680	95.2	991,280	1.5	142.8	12,450	12.56	19.22	1.83
White	585,640	95.3	895,140	1.5	143.0	11,275	12.60	19.25	1.83
Black	46,140	98.2	72,860	1.6	157.1	872	11.97	18.90	1.86
Northeast	578,120	106.3	835,300	1.4	148.8	16,071	19.24	27.80	2.96
Metropolitan counties	469,520	103.8	665,260	1.4	145.3	13,455	20.22	28.66	2.97
White	429,500	103.3	607,860	1.4	144.6	12,189	20.05	28.38	2.93
Black	29,240	123.3	42,800	1.5	185.0	948	22.15	32.42	4.00
Nonmetropolitan counties	108,600	121.4	170,040	1.6	194.2	2,616	15.39	24.09	2.92
White	105,180	121.5	164,780	1.6	194.4	2,536	15.39	24.11	2.93
Black	1,040	165.5	1,700	1.6	264.8	26	15.39	25.00	4.14
North Central	571,680	95.2	843,600	1.5	142.8	13,697	16.24	23.96	2.28
Metropolitan counties	385,460	105.5	571,160	1.5	158.3	10,370	18.16	26.90	2.84
White	339,460	102.8	500,980	1.5	154.2	8,857	17.68	26.09	2.68
Black	37,780	145.5	50,980	1.6	232.8	1,310	22.21	34.67	5.04
Nonmetropolitan counties	186,220	80.0	272,440	1.5	120.0	3,327	12.21	17.87	.14
White	179,420	79.5	262,420	1.5	119.3	3,200	12.20	17.84	.14
Black	2,640	113.3	4,220	1.6	181.3	58	13.69	21.97	2.49
West	316,880	90.9	452,000	1.4	127.3	10,070	22.28	31.78	2.89
Metropolitan counties	248,900	91.2	356,920	1.4	127.7	8,553	23.96	34.36	3.13
White	223,340	90.1	317,000	1.4	126.1	7,513	23.70	33.64	3.03
Black	12,120	141.6	20,280	1.7	240.7	559	27.55	146.12	6.53
Nonmetropolitan counties	67,980	91.1	95,080	1.4	127.5	1,517	15.96	22.32	2.03
White	64,300	92.1	89,700	1.4	128.9	1,433	15.97	22.29	2.05
Black	660	158.1	1,200	1.8	284.6	15	12.28	22.73	3.59
South	675,900	98.7	1,012,060	1.5	140.1	13,707	13.54	20.28	2.00
Metropolitan counties	391,020	98.1	558,340	1.4	137.3	8,718	15.61	22.30	2.19
White	314,260	126.7	434,520	1.4	177.4	6,655	15.31	21.18	2.68
Black	66,560	125.5	108,000	1.6	200.8	1,813	16.78	27.24	3.42
Nonmetropolitan counties	284,880	100.4	453,720	1.6	160.6	4,989	11.00	17.51	1.76
White	236,740	101.7	378,240	1.6	162.7	4,107	10.86	17.35	1.76
Black	41,800	95.9	65,740	1.6	153.4	774	11.77	18.52	1.78

1/ Excludes 16,680 visits and $232,000 in charges in unknown counties. Totals for U.S., region, and type of county include unknown race and races other than blacks and whites.

The proportion of beneficiaries using emergency room services in the metropolitan areas of the U.S. (100 per 1,000) was slightly higher than in nonmetropolitan areas (95 per 1,000). However in the Northeast and the South the user rates were higher for nonmetropolitan areas. The average number of visits per user was about the same in metropolitan (1.4) and nonmetropolitan (1.5) areas. The average charge per visit was higher in metropolitan areas ($19.10) than in nonmetropolitan areas ($12.56) and this relationship held in all regions. Thus, the average charge per beneficiary in metropolitan areas ($2.76) was higher than in nonmetropolitan areas ($1.83) and this was true in all regions.

Except for the South, the user rate among blacks was higher than whites in the metropolitan and nonmetropolitan areas of all regions. In the South, the rates were slightly higher for whites in both types of counties. Nationally, the black user rate in metropolitan areas (130 per 1,000 beneficiaries) was significantly higher than whites (98 per 1,000) and slightly higher in nonmetropolitan areas (98 vs 95 per 1,000 beneficiaries). But, the number of visits per 1,000 beneficiaries was 52 percent higher for blacks (209 compared to 138 for whites) in metropolitan areas and ten percent higher in nonmetropolitan areas (157 compared to 143 for whites).

In metropolitan areas, the average charge per black beneficiary ($4.16) was 57 percent higher than the average charge per white beneficiary ($2.65). In nonmetropolitan areas, the difference was negligible.

The above data suggest that blacks place greater reliance on hospital outpatient facilities for their medical services than do whites. The large

difference in the use of hospital outpatient clinics suggests that these facilities are an important locus of primary medical care for blacks, particularly in metropolitan areas. The data also suggest that blacks may be receiving a smaller proportion of their medical care services in physicians' offices than do whites. In order to explore this, the data shown in Table 12 were taken from the unpublished tabulations of the 1975 Current Medicare Survey.

Table 12 shows that 86 percent of the whites using physician services received at least one medical service in a physician's office compared to 75.5 percent of the blacks.[5] As expected, a higher percentage of blacks using physician services (40.7 percent) received at least one service in a hospital outpatient department than whites (29.6 percent). In relation to the enrolled population, about 362 black beneficiaries per 1,000 enrolled used hospital outpatient facilities for physician services compared to 252 per 1,000 whites. While physicians' offices are the chief locus of physician services for both races, aged blacks receive a higher percentage of their physician services (18.2 percent) in hospital outpatient departments than did aged whites (6.5 percent). This analysis of the program data suggests that this is particularly true in metropolitan areas. Further, large differences between blacks and whites in the use of outpatient clinics and emergency rooms suggests that hospital outpatient departments serve as an important locus of primary medical care for aged blacks in metropolitan areas.

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[5]All stated differences are significant at 95 percent confidence level.

TABLE 12.-Use of physicians services by place of service and race, 1975

Race	All SMI-covered physician services	SMI-covered physician services to hospital inpatients	SMI covered physician services to other than hospital outpatients		
			Total 1/	Physician's offices	Hospital outpatient departments
	Persons served				
Whites.....	16,675,300	4,596,100	16,337,600	14,344,000	4,934,100
Blacks.....	1,462,600	358,000	1,436,700	1,104,500	595,700
	Number of SMI-covered physician services				
Whites.....	222,382,700	96,325,200	126,057,500	90,098,600	14,382,200
Blacks.....	17,833,600	6,962,600	10,871,000	6,231,900	3,236,200
	Persons served per 1,000 enrolled				
Whites.....	850.5	234.4	833.2	731.6	251.6
Blacks.....	889.1	217.6	873.4	671.4	362.1
	Percent of persons using covered physician services				
Whites.....	100.0	27.6	98.0	86.0	29.6
Blacks.....	100.0	24.5	98.2	75.5	40.7
	Number of covered physician services per enrollee				
Whites.....	11.3	4.9	6.4	4.6	0.7
Blacks.....	10.8	4.2	6.6	3.8	2.0
	Number of covered physician services per user				
Whites.....	13.3	21.0	7.7	6.3	2.9
Blacks.....	12.2	19.5	7.6	5.6	5.4
	Percent of all covered physician services				
Whites.....	100.0	43.3	56.7	40.5	6.5
Blacks.....	100.0	39.0	61.0	34.9	18.2

1/ Includes services furnished to beneficiaries in nursing homes, their own homes, and other unspecified places not shown separately in the table.

Source: Current Medicare Survey, 1975. Unpublished tabulations.

CONCLUSIONS

The data in this report show that between 1967 and 1975 the use of the Medicare outpatient benefit by the aged grew at a faster rate than any other benefit. Between 1967 and 1975, the proportion of Medicare benefits paid for outpatient services increased from 0.9 percent to 2.9 percent. In 1975, hospital outpatient benefits accounted for 86 percent of all outpatient benefits, suggesting that the rate of growth in the use of hospital outpatient services by aged also grew rapidly between 1967 and 1975.

There are significant differences between white and black beneficiaries in the use of hospital outpatient services, especially in metropolitan areas. The lack of private physicians in the inner cities of the nation's metropolitan areas presents problems of access to medical services by the elderly blacks who reside there. Hospital outpatient clinics in the metropolitan areas have become a particularly important source of primary health care to elderly blacks. In 1975, about 70 percent of the aged black Medicare beneficiaries lived in metropolitan areas. By all measures of utilization, the blacks, in general, used hospital outpatient services to a greater extent than whites in metropolitan areas; particularly clinic services. The data also indicates that elderly blacks in metropolitan areas also make greater use of hospital emergency rooms. Thus, it seems clear that the outpatient services of the inner city hospitals are a significant source of medical care to the elderly blacks who live there.

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PROVIDER BILLING FOR MEDICAL AND OTHER HEALTH SERVICES

Form Approved
OMB No. 066-R-0017

MEDICAL INSURANCE BENEFITS—SOCIAL SECURITY ACT

This report is authorized by 42 USC 1395n; 42 CFR 405. 1660. Your cooperation is needed to keep proper Beneficiary Records and to make proper Medicare Payments.
NOTICE: Anyone who misrepresents or falsifies essential information requested by this form may upon conviction be subject to fine and imprisonment under Federal law.

1. Patient's last name	First name	MI	2. Health insurance claim number
3. Patient's address *(Street number, City, State)*		Zip Code	4. Date of birth ___ ___ ___ ___ ___ ___	5. Sex ☐ M ☐ F
6. Provider name and address *(City and State)*	7. Provider number		9. Type of service A. ☐ Inpatient B. ☐ Outpatient C. ☐ Other *(Specify)*
	8. Medical record number		

If any of your medical expenses may be paid by your insurance organization or State Agency, complete Items 10 and 11. If you do not want information about this Medicare claim released to your insurance organization, check this block ☐

10. Name and address of organization or agency	11. Policy or identification number

12. Patient's Certification, Authorization to Release Information, and Payment Request. I certify that the information given by me in applying for payment under Title XVIII of the Social Security Act is correct. I authorize any holder of medical or other information about me to release to the Social Security Administration and/or the Medicare Program or its intermediaries or carriers or to the Professional Standards Review Organizations any information needed for this or a related Medicare claim. I request that payment of authorized benefits be made on my behalf.

Signature *(Patient or authorized representative) (Signature by mark must be witnessed)*	☐ Contained in provider's record	Date
13. Nature of illness or injury Employment Related and/or Entitlement to Other Government Programs ☐ Yes ☐ No *(If Yes, Give Name and Address of Employer and/or Program)*		Do not use this space
14. Surgical procedures		

15. Statement of services	Covered Charges		16. Statement Covers Period	First service	Last service
A. Clinic visit ( )					
B. Emergency room ( )			17. Blood Information	A. Pints furnished / B. Pints replaced / C. Pints (Not Replaced) / D. Charge per pint / E. Patient paid for deductible	
C. Laboratory					
D. Radiology			18. Professional component (hospital inpatients)		19. Other professional component
E. Pharmacy			A. Pathology	B. Radiology	
F. Blood			20. Date benefits exhausted or HH plan terminated		21. Patient paid (Excluding 17E)
G. Ambulance			22. I certify that the required physician's certification is on file.		23. Date received
H. Physical therapy					
I. Other *(Specify)*			FOR INTERMEDIARY USE ONLY		
			24. Verified Patient Liability		
			A. Blood deductible	B. Cash deductible	C. Coinsurance
			25. Payment Distribution		26. Date approved
			Provider	Patient	
J. TOTAL					

Remarks:

APPENDIX B

Sources and Limitations of the Data

The data in this report were derived from a five percent sample of aged persons enrolled for Medicare Supplementary Medical Insurance.[1] Counts were multiplied by 20 to estimate total data. Data for 1975 are from bills for hospital outpatient services (Form HCFA 1483) performed in that year which were recorded in the Health Care Financing Administration's central records as of December 1976.[2] About 97 percent of all reimbursements had been recorded by December 1976. Payments for hospital outpatient services shown in this report are based on interim rates that may be adjusted after the end of the accounting year, based on reasonable costs of operations. The bill form used for outpatient services, HCFA 1483, is reproduced as Appendix A. Data for all outpatient services were obtained from the Summary series.

Enrollment used in determining rates in this report is based on the number of persons enrolled for SMI as of July 1, 1975, and is published in Health Care Financing Administration, Office of Policy, Planning and Research, Medicare: Health Insurance for the Aged and Disabled, 1975 Section 2: Enrollment, Washington, D.C.

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[1] Reliability of estimates was prepared by James Beebe, Statistical and Research Services Branch, Division of Economic Analysis, Office of Research.

[2] Form HCFA 1483 is also used to bill for other services. These include non-hospital outpatient physical therapy services and outpatient services furnished to inpatients when their inpatient benefit days are exhausted.

Data in this report are estimates based on a five percent sample of SMI enrollees and, hence are subject to sampling variability. Appendix Tables C. 1 through C. 6 show approximate standard errors for most of the estimates in this report. The standard error is primarily a measure of sampling variability, that is, of the variation that occurs by chance, because a sample rather than the whole population is used. In order to calculate standard errors at a reasonable cost, approximate methods were used. Thus, these tables should be used only as indicators of the order of magnitude of the standard errors for specific estimates. In general, estimates for small subgroups and percentages, or means with small bases, tend to be relatively unreliable. All statements in this report comparing differences between sample statistics meet statistical tests at the five percent significance level.

Appendix C

Table C.1
Approximate Standard Error for Estimated Number of Users of Services
(68 chances out of 100)

Estimated Number of Users	Standard Error of Estimate
1,000	140
3,000	240
5,000	310
10,000	440
30,000	750
50,000	970
100,000	1,400
300,000	2,400
500,000	3,000
1,000,000	4,300
3,000,000	7,000
5,000,000	8,600

Table C.2
Approximate Standard Error of Estimated Charges and Reimbursement
(68 chances out of 100)

Estimated Charges or Reimbursement	Standard Error of Estimate
1,000	970
3,000	2,900
5,000	4,900
10,000	9,700
30,000	17,000
50,000	23,000
100,000	33,000
300,000	59,000
500,000	78,000
1,000,000	110,000
3,000,000	220,000
5,000,000	290,000
10,000,000	450,000
30,000,000	880,000
50,000,000	1,200,000
100,000,000	1,800,000
300,000,000	3,000,000
500,000,000	3,000,000

Table C.3
Approximate Standard Error of Estimated Visits
(68 chances out of 100)

Estimated Visits	Standard Error of Estimate
50	49
100	97
300	220
500	280
1,000	400
3,000	700
5,000	910
10,000	1,300
30,000	2,300
50,000	2,900
100,000	4,200
300,000	7,500
500,000	9,900
1,000,000	14,000
3,000,000	24,000

Table C.4
Approximate Standard Error of Estimated Charges or Reimbursement Per User
(68 chances out of 100)

Number of Users in Base	Estimated Charges or Reimbursement per User							
	$20	$40	$60	$80	$100	$120	$140	$160
	$	$	$	$	$	$	$	$
1,000	14	20	25	29	33	36	39	42
3,000	8.3	12	15	17	20	22	24	25
5,000	6.5	9.5	12	14	16	17	19	20
10,000	4.7	6.9	8.6	10	11	13	14	15
30,000	2.9	4.2	5.3	6.3	7.2	8.0	8.9	9.5
50,000	2.3	3.4	4.3	5.1	5.9	6.5	7.2	7.8
100,000	1.7	2.6	3.3	3.9	4.5	5.0	5.5	5.9
300,000	1.1	1.7	2.1	2.5	2.9	3.3	3.6	3.9
500,000	.89	1.4	1.8	2.1	2.4	2.7	2.9	3.2
1,000,000	.68	1.0	1.3	1.6	1.8	2.0	2.1	2.3
3,000,000	.44	.66	.81	.92	1.0	1.1	1.3	1.3
5,000,000	.36	.51	.61	.73	.83	.93	NA	NA

NA - Not applicable

Table C.5
Approximate Standard Error of Estimated Reimbursement as Percent of Charges
(68 chances out of 100)

Amount of Charges in Base (in thousands)	Reimbursement as Percent of Charge			
	40%	50%	60%	70%
$ 50	10	9.6	8.6	7.6
100	7.3	6.7	6.0	5.3
300	4.1	3.8	3.4	3.1
500	3.2	2.9	2.6	2.4
1,000	2.2	2.0	1.8	1.7
3,000	1.2	1.1	1.0	.98
5,000	.91	.86	.81	.77
10,000	.63	.59	.57	.55
30,000	.48	.47	.45	.44
50,000	.45	.43	.41	.36
100,000	.34	.32	.30	.27
300,000	.25	.23	.21	.18
500,000	.17	.16	.14	.13

Table C.6
Approximate Standard Error of Estimated Charges Per Visit
(68 chances out of 100)

Number of Visits in Base	Charges per Visit					
	$5	$10	$15	$20	$25	$30
	$	$	$	$	$	$
50	24	31	36	40	43	46
100	17	22	26	28	31	33
300	10	13	15	16	18	19
500	7.8	10	12	13	14	15
1,000	5.5	7.2	8.2	9.1	9.9	11
3,000	3.2	4.2	4.9	5.4	5.9	6.3
5,000	2.5	3.3	3.8	4.2	4.6	5.0
10,000	1.8	2.4	2.8	3.1	3.4	3.6
30,000	1.1	1.4	1.7	1.9	2.1	2.2
50,000	.85	1.1	1.3	1.5	1.7	1.8
100,000	.62	.85	1.0	1.1	1.3	1.4
300,000	.39	.54	.66	.75	.83	.91
500,000	.31	.44	.54	.62	.69	.76
1,000,000	.24	.34	.42	.49	.54	.59
3,000,000	.16	.23	.29	.33	.37	.40

APPENDIX D

Source of Current Medicare Survey (CMS) Data

The Current Medicare Survey used a two-stage probability sample design. The sample represented all disabled medical insurance enrollees in the 50 States and the District of Columbia. The first-stage sample consisted of "primary sampling units" (PSU's). Each PSU consisted of a standard metropolitan statistical area (SMSA), a single county of several adjacent counties. Within these first-stage units, a systematic sample of persons was selected from a digital sample of persons enrolled in the medical insurance program. The selection of this digital sample was based on the last digit of the health insurance claim number.

For the Current Medicare Survey, sample persons were selected for interviews starting in October of each year and remained in the survey for 15 months. A 15-month cycle was used because any covered medical expenses incurred by an individual in the last 3 months of a calendar year which are applied to the deductible for that year may be carried over and applied to the deductible for the next calendar year.

Data for these sample persons were collected through monthly personal interviews conducted by the Bureau of the Census. The interviews provided information about the use of medical care and related services during the preceding month.

Reliability of CMS Estimates

Since the CMS estimates are based on a sample of enrolled persons, they may differ somewhat from the figures that would have been obtained if the same data had been collected for the entire universe of enrolled persons and the same collection procedures used. The data may also differ from the results of statistical compilation of data from the administrative records. As in any data collection, the results are subject to errors of response, reporting, processing, and sampling variability.

The estimates developed from the CMS are based in part on the memory of knowledge of each respondent. The memory factor in data derived from field surveys probably produces underestimates, because the tendency is to forget minor or irregular items. On the other hand, the recall factor is aided by successive visits to the same sample enrollees and the use of a diary form left with the enrollee. As the enrollee uses any medical service, he/she is encouraged to record information about this service on the diary form. The successive visits also may have provided a basis for greater understanding of procedures involved in program participation, which may also affect the estimates derived from this survey. Some errors may also result from misunderstanding as to the scope of the program's coverage.

The standard error is primarily a measure of sampling variability, that is, of the variations that occur by chance because a sample rather than the whole universe was used. As calculated for this report, the standard error also partially measures the effect of response errors but does not measure any systematic biases in the data. The chances are about 68 out of 100

that an estimate from the sample would differ from the result for the entire universe, with the same procedures and methods used, by less than the standard error. Chances are about 95 out of 100 that the differences would be less than twice the standard error. Chances are about 99 out of 100 that the differences would be less than 2 1/2 times the standard error.

The generalized tables of standard errors of numbers of persons and medical services shown in this appendix provide an indication of the order of magnitude of the standard errors rather than the standard error of any specific estimate. For ease in some uses of the data, the relative variance of each estimate is also shown. This coefficient is simply the estimated variance divided by the square of the estimate.

The generalized tables of standard errors of numbers of persons and medical services shown in this appendix provide an indication of the order of magnitude of the standard errors rather than the standard error of any specific estimate. For ease in some uses of the data, the relative variance of each estimate is also shown. This coefficient is simply the estimated variance divided by the square of the estimate.

In order to derive standard errors that would be applicable to the wide variety of items presented and that could be prepared at moderate cost, a group of items was selected for which approximations to the standard errors have been estimated. It is possible to generalize the standard errors of the estimated number of enrolled persons having various program or demographic characteristics. Similarly, it has been possible to generalize the standard errors of estimates for medical services.

Table D1 may be used for approximate standard errors of the estimated number of enrollees with various program or demographic characteristics. Table D3 contains approximate standard errors of estimates number of physician services rendered outside of the inpatient hospital setting. Table D1 is for percentages (the reliability of an estimated percentage depends on both the size of the percentage and its denominator). The enrollment figures used for CMS computations were: 19,607,500 whites, and 1,645,000 blacks. These are estimates generated from the sample rather than published enrollment figures from program data.

Table D1

Approximate standard error and relative variance of estimated number of SMI beneficiaries having various program or demographic characteristics

(68 chances out of 100)

Size of estimate (in thousands)	Standard error (in thousands)	Relative Variance
100	25	.0625
500	55	.0121
1,000	75	.0056
10,000	200	.0004
15,000	200	.0002
20,000	200	.0001

Table D2

Approximate standard error and relative variance of estimates of SMI-covered physician services outside of inpatient hospital setting

(68 chances out of 100)

Size of estimate (in thousands)	Standard error (in thousands)	Relative variance
1	0.5	.2500
5	1.0	.0400
10	1.5	.0225
50	3.0	.0036
100	5.0	.0025
500	15.0	.0009
1,000	20	.0004

Examples of Computations of Standard Errors

To estimate standard errors of numbers not presented specifically in the tables, linear interpolation may be used. Illustration: From CMS table in text aged white beneficiaries used 14,382,200 SMI-covered physician services in hospital outpatient departments during 1975. Reading table D2:

Estimate	Standard error
10,000,000	1,500,000
50,000,000	3,000,000

Linear interpolation indicates that the standard error sought is approximately 1,664,300. We may be 68-percent confident that SMI-covered physician services to white beneficiaries in hospital outpatient departments were between 12,717,900 and 16,046,500.

Table D3

Approximate standard error of estimates of percentage based on persons or services

(68 chances out of 100)

Type of estimate	Denominator of percentage						
Beneficiaries (in thousands)	..	100	300	1,000	3,000	10,000	20,000
SMI-covered physician services outside of inpatient hospital setting (in millions)	1.	3.	10	30	100	300	600
Estimated percentage	**Standard error of percentage**						
2 or 98	6.3	3.6	2.0	1.1	0.6	0.3	0.3
5 or 95	10.0	5.5	3.1	1.7	1.0	0.5	0.5
10 or 90	13.7	7.6	4.2	2.4	1.3	0.7	0.7
25 or 75	19.5	11.2	6.1	3.5	1.9	1.1	0.9
50	22.5	12.8	7.1	4.0	2.2	1.2	1.1

Standard Error of Percentages

To determine the standard error of a percentage use table D3. Illustration: From the CMS data table an estimated 6.5 percent of SMI-covered physician services to aged white beneficiaries were furnished in hospital outpatient departments. The denominator, all SMI-covered physician services, for white beneficiaries was 222,382,700. Reading and interpolating in table D3 an estimated 6.5 percent with a denominator of 222,382,700 services has a standard error of .77 percent. Thus, a 68-percent confidence interval was about 5.7 to 7.3 percent for one percent of physician services received by white disabled beneficiaries in hospital outpatient departments in 1975.

Standard Error of Averages

To estimate the standard error of an average, multiply the average by the square root of the sum of the relative variances of the average's numerator and denominator. Illustration: From the CMS table aged white beneficiaries who used SMI-covered physician services in hospital outpatient departments received an average of 2.9 services - that is 14,382,200 services divided by 4,934,100 persons served. From table D2, the relative variance of 14,382,200 is about .0197 while from table D1 the relative variance of 4,934,100 is about .0029. Multiplying the average (4.8) times the square root of the sum of .0197 and .0029 yields a standard error of about .15 services. Thus, a 68-percent confidence interval is 2.75 to 3.05 SMI-covered physician services per person.

Standard Error of Differences

To estimate the standard error of the difference of any two estimates (A-B, where A and B are estimates of totals, averages, percentages, etc.) calculate the square root of the sum of the squares of the standard errors of the two estimates. In symbols, the estimated standard error of A-B is:

$$SE_{A-B} = \sqrt{SE_A^2 + SE_B^2}$$

For example, from the CMS data table, an estimated 18.2 percent of the covered physician services used by aged black beneficiaries were received in hospital outpatient departments. The corresponding figure for white beneficiaries was 6.5 percent. The difference is calculated as A-B = 18.2 - 6.5 = 11.7 percent. The standard error of A is .77 percent and the standard error of B is 4.4 percent (see example for Standard Error of Percentages). The standard error of A-B is therefore computed as:

$$SE_{A-B} = \sqrt{(.77)^2 + (4.4)^2}$$

The 68 percent confidence interval is given by 7.2 to 16.2 percent (i.e., 11.7 $\pm$ 4.5).

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